Recreational And Economic Importance of Introduced Fish in Washington

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Abstract- *There were more than 550,000 licensed resident game fish anglers in Washington in 1994. They expended in excess of 18 million angler days. An estimated 80%, or nearly 14.5 million days, of this total effort was directed at introduced fish. Using an estimate expenditure of $50 per angler day, introduced resident game fish generated at least $725 million dollars in spending to boost Washington's economy in 1994. Fisheries for introduced species include those directed at warmwater game fish, trout fisheries supported by hatchery stocking of non-indigenous strains, and those for introduced trout species such as brook trout and brown trout.*

Warmwater game fish represent the fastest growing segment of resident sport fishery in Washington. The number of warmwater anglers has increased from an estimated 170,000 in 1968 to 334,000 in 1994. During this same period, the number of angler days expended has increased from 2.1 million to 6.2 million. The percentage of all resident game fish anglers fishing for warmwater fish increased from 52.3 to 62.7 between 1968 and 1994, and the number of Washington anglers indicating a preference for these species increased from 23.0 to 34.7 percent. During this same period, fisheries for introduced trout in lowland and alpine lakes has increased slightly, while stream fishing has declined.

Recreational fisheries for introduced fish are not only economically important, but also have great social and political import to the region. The ability to participate in these fisheries fosters a sense of public ownership and responsibility which is vital to maintaining public and political support for habitat protection and other sacrifices needed to conserve and protect native fish and wildlife resources. Washington and other state fish and wildlife agencies have a responsibility to maintain recreational angling opportunity unless those opportunities have significant adverse impacts on native fish and wildlife resources.

Introduction

Introduced fish species provide the vast majority of inland recreational angling opportunity in Washington. It is estimated that introduced species of warmwater game fish and trout and the extensive use of non-native trout strains to maintain hatchery stocking programs, account for over 80% of total inland fishing opportunities produced in Washington (Table 1).

Table 1. Importance of Introduced Fish Species to Inland Recreational Fisheries in Washington - Totals

Fishery	# Angler Days	% Dependent on Introduced Species	# Dependent on Introduced Species
Lowland Lake Trout	6,462,000	90	5,813,000
Warmwater	6,174,000	100	6,174,000
Resident Streams	2,430,000	50	1,215,000
High Lakes	1,350,000	95	1,282,500
Searun Cutthroat	1,584,000	20	316,800
Total	**18,000,000**	**82.9**	**14,804,000**

WDFW 1994
Does not include unlicensed anglers.

Recreationally Important Inland Fish Species

Table 2 includes a list of the top twelve inland fish species in Washington based on the percentage of anglers who indicated that they completed at least one trip for that species during 1994.

Table 2. Importance of Introduced Species to Inland Recreational Fisheries in Washington - Percent Fish For.

Species	% Fish For	Native	Introduced	% Exotic Stocks
Rainbow Trout	89.8	✓	✔	90
Black Bass	43.4		✔	
Brook Trout	42.6		✔	
Brown Trout	41.8		✔	
Resident Cutthroat	40.7	✔	✓	20
Kokanee	40.5	✔	✓	50
Steelhead	35.9	✔	✓	75
Lake Trout	35.8		✔	
Yellow Perch	31.6		✔	
Searun Cutthroat	28.4	✔	✓	10
Crappie/Sunfish	27.9		✔	
Walleye	24.1		✔	

WDFW 1994
Does not include unlicensed anglers.

Table 3 lists the percentage of those anglers surveyed in 1994 who preferred to fish for individual species/groups above all others.

Table 3. Importance of Introduced Species to Inland Recreational Fisheries in Washington - Percent Preferred.

Species	% Preferred	Native	Introduced
Rainbow Trout	42.6	✓	✔
Black Bass	15.7		✔
Steelhead	12.8	✔	✓
Kokanee	5.6	✔	✓
Walleye	5.3		✔
Lake Trout	3.2		✔
Resident Cutthroat	3.0	✔	✓
Searun Cutthroat	2.1	✔	✓
Brook Trout	2.0		✔
Brown Trout	2.0		✔
Crappie/Sunfish	1.7		✔
Catfish	1.1		✔

WDFW 1994
Does not include unlicensed anglers.

Recreational Importance of Warmwater Fisheries

The fastest growing segment of the recreational fishery in Washington is for warmwater fish species.

Table 4 summarizes the results of angler preference surveys completed by the Washington Department of Fish and Wildlife in 1968, 1986 and 1994. This table shows a steady and quite dramatic increase in utilization for this fishery, with a 3.2% average annual increase in the number of anglers participating and a 7.5% average annual increase in the number of days of recreation over the past seventeen years.

Table 4. Importance of Introduced Warmwater Fish Species to Inland Recreational Fisheries in Washington - Trends

Category	1968	1986	1994	Average Annual % Increased
Number of Anglers	170K	244K	334K	3.2
Number of Angler Days	2.1M	3.1M	6.2 M	7.5
Number of Trips/Year	12.3	14.8	18.5	1.9
Percent Fishing For	52.3	54.8	62.7	0.8
Percent Preferring	23.0	29.6	34.3	1.9

WDFW 1994
Does not include unlicensed anglers.

Economic Importance of Introduced Resident Fisheries

Fisheries for introduced resident fish species generate an estimated 14.5 million angler days of recreation annually in Washington. At an estimated $50.00 per angler day, the annual estimated expenditure on these fisheries is over 735 million dollars a year (Table 6).

Table 5. Estimated Economic Value of Recreational Fisheries for Introduced Fish Species in Washington.

Fishery	$50/Angler Day
Lowland Lake Trout	290,650,000
Warmwater	300,700,000
Resident Streams	60,750,000
High Lakes	64,125,000
Searun Cutthroat	15,840,000
Totals	**735,065,000**

WDFW 1994
Does not include unlicensed anglers.